



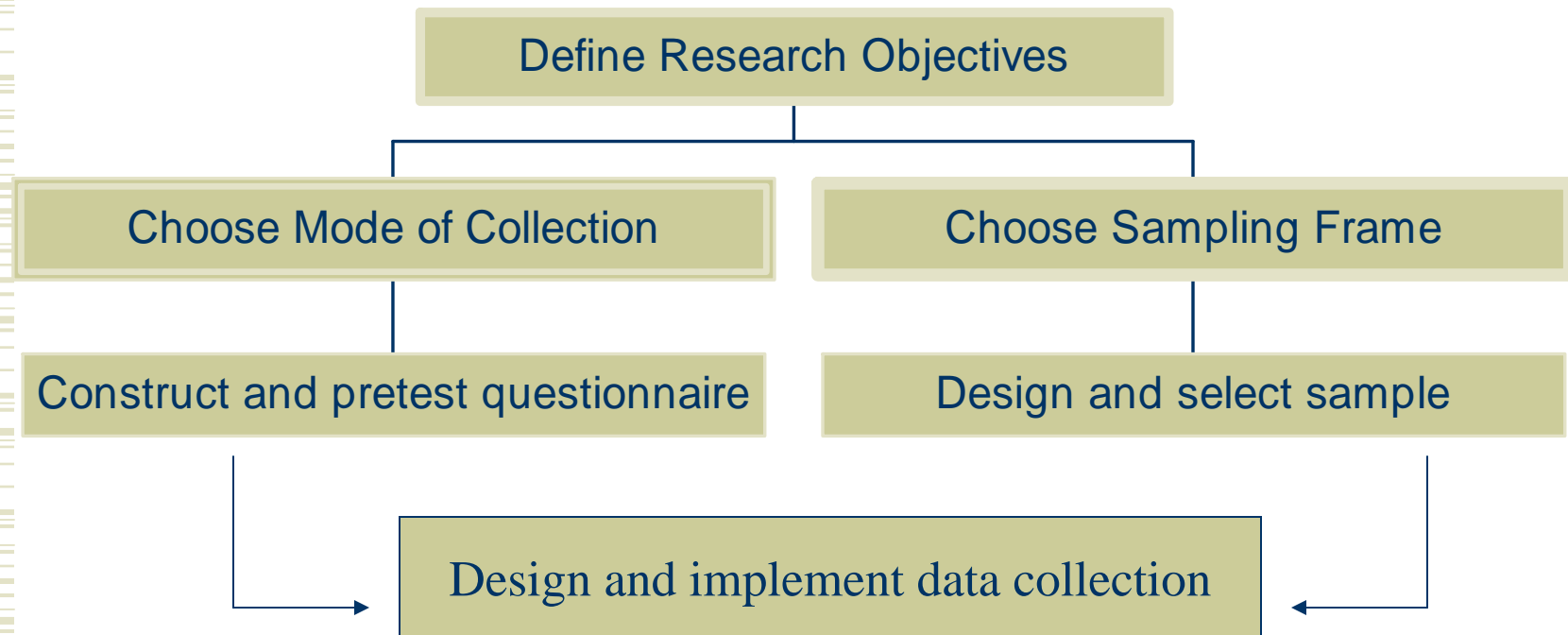
Methods of Data Collection

Survey Methodology

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Survey Design Modes



First comparison: IAQ vs. SAQ

Interviewer-Administered

- ◆ Face-to-face
 - CAPI or paper
- ◆ Telephone
 - CATI or paper

Self-Administered

- ◆ Mail
 - Paper
- ◆ Internet
 - E-mail
 - Web
- ◆ Telephone (IVR)
- ◆ Face-to-Face option (ACASI)



Interviewers: PROs

- ◆ Boost participation for several reasons
 - → Better overall response rate
 - Face-to-face more than telephone
- ◆ Can clarify, probe, make sure answers are complete
- ◆ Ensure that questions are answered in a standard order, skips work properly, questions make more sense to participant.



Interviewers: PROs

- ◆ Purpose of survey is not fully apparent when respondent agrees to participate
 - E.g. asthmatics more likely to respond to a survey about asthma if they see lots of questions about it.
- ◆ Personal connection is important in a longitudinal study, therefore interactions with interviewers can reduce loss-to-follow-up

Interviewers: Cons

- ◆ More expensive
- ◆ May influence answers because of their race, apparent income bracket, gender, etc.
- ◆ Privacy is reduced and answers to sensitive questions could change
 - Interviewers know your answer
 - Strategies developed to increase privacy in IAQ settings
 - NSDUH used audio CASI
 - IVR or telephone audio-CASI for phone interviews.



Mail and Internet Surveys (IMHO)

- ◆ For mail surveys, usually response rates are too low to use
 - Could be component of survey (e.g. enumeration, advertisement, etc,)
- ◆ Internet surveys may work in the future or in special populations (e.g. college students).
 - Effect of mode still being studied.
 - Could be component of survey (e.g. option for longitudinal follow-up).

Comparison of Telephone and Face-to-Face modes

Face-to-Face

- ◆ Expensive
- ◆ Best response rates
- ◆ Worst for sensitive questions
- ◆ All things being equal, lower power (less precise estimates)

Telephone

- ◆ Less expensive
- ◆ If reliant on RDD
 - Substantially lower response rates
 - Rates have been decreasing over time
- ◆ Potentially poorer external validity

Response Rates

- ◆ Door-to-door surveys often have response rates $>70\%$ -- sometimes $> 90\%$.
- ◆ Telephone/RDD surveys usually have response rates $<50\%$ and rates are declining.

What are some reasons why telephone response rates are so low?



California Health Interview Survey (2001)

- ◆ Purpose: To provide information similar to the national health interview survey
- ◆ Rationale: CHIS could provide prevalence estimates for counties and for race/ethnicity & age subgroups within counties
 - Asian and Pacific Islander subpopulations were of special interest.
 - No good info in NHIS for this group.

CHIS & NHIS: Comparison of Methods

- ◆ NHIS is face-to-face (for initial contact).
 - 1997: 39,832 HH; 40,623 families; 36,116 adults.
 - Household response rate was >90% from 1995-8
- ◆ CHIS survey used RDD and telephone surveys
 - Supplemented RDD with “lists” of Asian subpopulations based on last name.
 - Some counties paid for an oversample
 - >55,000 households interviewed
 - Overall response rate statewide was 37.7%
 - Non-response bias? Prevalence estimates OK?

CHIS: Proposal

- ◆ What if CHIS were done as a door-to-door survey like NHIS?
 - Prohibitively expensive
 - Fewer Households would be interviewed
 - Probably harder to market the survey
 - Regional prevalence estimates instead of county-level
 - Greater external validity possible
 - Especially important for prevalence estimates
 - Critical information for policy purposes. If information is biased, are priorities incorrect?



BRFSS

- ◆ BRFSS is also RDD
- ◆ Response rates have also been declining over time.
- ◆ Median overall response rate in 2002 was 44.5%
 - (Range=25.2 to 79.3). (California was 31.5%)
- ◆ Is this OK?
- ◆ If not, what are our options?



Survey Background

- ◆ Childhood Lead Prevalence Surveys
- ◆ Los Angeles Children's Asthma Project (LACAP)
- ◆ Bayview Hunters Point Community Survey
- ◆ The Fresno Asthma, Children and the Environment Survey (FACES)



Childhood Lead Surveys: Oakland, Compton/Wilmington

- ◆ Used to assess the burden of childhood lead poisoning in CA.
- ◆ Justified creation of CLPP programs in CA
- ◆ Prevalence survey
- ◆ Door-to-door; blood lead levels taken at door

CA Lead Prevalence Surveys

Study Design

- ◆ Selected census tracts then used all eligible HH within each tract
- ◆ Enumeration of children 1-6:
 - used purchased mailing lists to list frame
 - Mail, telephone and in-person
- ◆ Separate household, family and child questionnaires
- ◆ 350 HH, 550 children in Oakland.



Lead Prevalence Surveys: Issues

- ◆ Telephone enumeration requires phone #, mail and in-person require address
 - Phone numbers could be connected to person outside of study area.
 - Only listed numbers in reverse directory
- ◆ Several people could be attached to one address
- ◆ Inaccuracies: vacant lots listed as households
- ◆ Studies took place from 1987-1989, census information was old.



CA CLPP Surveys: Issues

- ◆ Used certain census tract characteristics to select high-risk tracts
- ◆ Studies took place in late 1980's
- ◆ Race/ethnicity distribution could be very different – harder to assess differential non-response.
- ◆ May not have selected worst-case tracts

LA Children's Asthma Project

Purpose: Study relationship of daily air pollution exposures and symptoms in African-american asthmatic children

- ◆ Panel-design: followed ~130 children for 13 weeks
 - Baseline + 2 home visits+13 weekly diaries
 - Baseline+Visits=IAQ
 - Diaries=SAQ

LACAP: Issues

- ◆ Some children falsified daily diary information
 - 90-days of daily data was a lot for each child to do.
 - Symptom data probably OK, PF data NOT.
 - Newer technology (computerized spirometers) now available. PF recorded
 - Also can be programmed for up to 6 questions about symptoms.
 - Redesign of study.
 - 90-day panel is too long for most children. Other studies have used a series of 2-week panels from the same set of children.

BVHP Community Survey

Purpose: Assess community concerns/priorities, prevalence of chronic diseases, access to care for EJ group.

Methods/Design

- ◆ Prevalence questions and needs of the EJ group were deciding factors for the selected design.
- ◆ Listed every HH in randomly selected census blocks (PPS)
- ◆ IAQ survey to determine household prevalence.
- ◆ Randomly-selected adult filled out SAQ.
- ◆ 249 HH, 925 residents for < 65K.

BVHP Community Survey: Issues

- ◆ Trained community members to be interviewers.
 - Not always interested in being neutral
 - Didn't want to probe for community concerns
- ◆ Hired consultant would have been cheaper and faster, but would not have met needs of community or group
- ◆ RDD might have worked, but...
 - Personal contact was important to comm. group
 - Probably would have lowered response rate.



FACES

- ◆ A longitudinal cohort of asthmatic children from Fresno which has high levels of PM from both agricultural and urban sources
- ◆ Study of relationship of chronic air pollutant exposures and lung function development in asthmatic children.
- ◆ Voluntary ongoing recruitment: 10/00 - 10/04
 - 309 children recruited
- ◆ Up to 4-years of data collection for each child

FACES (continued)

- ◆ Baseline Survey – in clinic
 - Adult Questionnaire, Child Questionnaire+ pulmonary function
- ◆ 6-monthly clinic visit (Adult/Child)
 - Asthma symptoms, medication use, pulmonary function
 - Sensitive smoking questions given via walkman.
- ◆ 6-monthly telephone visit (Adult)
 - Same questions as in clinic visit, no pulmonary function



FACES

- ◆ 3 “home visits” per year.
 - Indoor NO₂, ETS, ozone, dust levels, outdoor ozone
 - 2-week diary (SAQ), portable spirometer with questions
- ◆ In process of writing new questionnaires for second round of funding.
 - Puberty questions for children and adults
 - As children get older, might combine adult/child q’aires.



FACES: Issues



- ◆ Initial diary was too burdensome
 - Lots of missing data
 - Revised daily diary and missing data substantially reduced
 - SAQ format means compromises/differences in what you ask for

FACES: Issues

Need to reduce burden on participants where possible

- ◆ Would it be appropriate to change modes of some questionnaires mid-study?
 - e.g. provide e-mail or web option to telephone survey?
 - e.g. have teen child be the respondent for questions from adult survey



Assignment

- ◆ What would be the ideal way to administer your questionnaire/survey?
- ◆ What is the likely mode or modes you will be able to use for your survey?
 - Given budgetary considerations, time, goals of the study or project, concerns about nonresponse
 - Consider sampling frames that you could use
- ◆ Think about cost differences between the ideal and pragmatic approaches. Inference differences.